

**AMENDMENTS TO THE CLAIMS:**

Please amend the claims as follows:

1. (Previously Presented) A structure comprising macromolecules self-organized around nanotubes, wherein said structure is essentially formed from rings of polymerized lipid compounds surrounding the nanotubes, the polymerized lipid compounds comprising one chain, A, or two A chains, said one chain A or two A chains being linked to a group Z, said polymerized lipid compounds having the structure A-Z-A or A-Z,

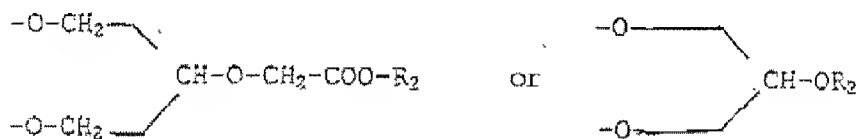
wherein:

- A represents a  $\text{CH}_3-(\text{CH}_2)_m-\text{C}\equiv\text{C}-\text{C}\equiv\text{C}-(\text{CH}_2)_n-$  chain, wherein n and m,

which are the same or different, are integers from 1 to 16; and

- Z represents a polar head formed by a  $-\text{COOH}$ ,  $-\text{CO}-\text{NH}-\text{Y}$ ,  $-\text{NH}_2$  or  $\text{N}^+(\text{R})_3$  group, R being a  $\text{C}_1$  to  $\text{C}_4$  alkyl and Y being a  $-(\text{CH}_2)_4-\text{C}(\text{R}_1)-\text{N}(\text{CH}_2-\text{COOH})_2$  radical,

provided that if said polymerized lipid compounds contain one chain, A, then  $\text{R}_1$  represents H or a  $\text{COOH}$  radical, and A further represents a group of the following structure:

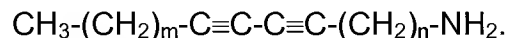


where  $\text{R}_2$  represents a  $-\text{COOH}$  or  $-\text{CO}-\text{NH}-\text{Y}_1$  group,  $\text{Y}_1$  being a  $-(\text{CH}_2)_4-\text{C}(\text{R}_3)-$

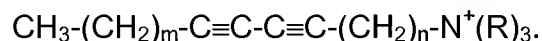
$N(CH_2-COOH)_2$  radical and where  $R_3$  represents H or a COOH radical;

or Z or  $R_2$  may also be hydrophilic or neutral polar heads.

2. (Previously Presented) The structure as claimed in claim 1, characterized in that the lipid compounds to be polymerized are amine lipids of formula:



3. (Previously Presented) The structure as claimed in claim 1, wherein the lipid compounds to be polymerized are quaternary ammoniums of formula:



4. (Previously Presented) The structure as claimed in claim 1, wherein the lipid compounds to be polymerized are acid lipids with two chains A attached to Z.

5. (Previously Presented) The structure as claimed in claim 2, wherein the lipid compounds to be polymerized are functionalized by a chelating group.

6. (Previously Presented) The structure as claimed in claim 1, wherein the lipid compounds to be polymerized are functionalized by a neutral hydrophilic head.

7. (Previously Presented) A method of obtaining the structure as claimed in claim 1, comprising:

- bringing the raw nanotubes into contact with a solution of lipids so as to form a stable suspension;
- polymerizing the lipids, which are self-organized around the nanotubes; and
- recovering the nanotubes coated with rings formed by the polymerized lipids.

8. (Previously Presented) The method as claimed in claim 7, wherein the raw nanotubes are sonicated in a lipid solution in a buffered aqueous medium, optionally

~~advantageously~~ containing a detergent, the latter being subsequently removed by dialysis, and then the suspension of nanotubes in the aqueous buffer is subjected to a treatment for polymerizing the lipids.

9. (Currently Amended) A method of producing nanotubes of similar sizes comprising sonicating the structures of claim 1 to produce structures of similar sizes, and removing said purifying nanotubes, wherein the structure as claimed in claim 1 are subjected to a treatment so as to remove the rings of polymerized lipid compounds around the nanotubes of said structures by application of an electric field or heat in order to remove said polymerized lipid compounds to produce said nanotubes of similar sizes.

10. (Currently Amended) The method as claimed in claim 9, wherein said structures of similar sizes are ~~[[is]]~~ subjected to size exclusion chromatography.

11. (Cancelled)

12. (Currently Amended) The method as claimed in claim 9, wherein said heat is applied to said structures of similar sizes ~~structure is heated~~ in a Tris buffer at a temperature above 90°C for about 14 hours ~~in order to remove the polymer and obtain the stripped nanotubes.~~

13. (Currently Amended) A method for obtaining nanotubes protected by a polymer coating, said method comprising treating nanotubes according to the method of claim 8 and, optionally, shortening the nanotubes thus obtained through sonication~~[[a]] chemical fragmentation process.~~

14. (Currently Amended) A method for obtaining vectors for hydrophobic

molecules or membrane proteins, comprising:

applying an electric field to the structures of claim 1 to detach said ring of polymerized lipid from said nanotubes, and

recovering said polymerized lipid rings as said vectors

~~stripping off the nanotubes structures according to claim 1 and purifying the nanotubes obtained according to the method of claim 9, 10 or 11 to solubilize hydrophobic molecules,~~

~~sonicating the hydrophobic molecules in the presence of said structures, or solubilising membrane proteins that are purified in the presence of detergents, removing the detergent dialysis.~~

15. (Cancelled)

16. (Currently Amended) A method of encapsulating an active principle in macromolecules comprising a lipid bilayer, said method comprising

applying an electric field to the structures of claim 1 to detach said ring of polymerized lipid from said nanotubes to produce said macromolecules, and

loading said macromolecules with said active principle to produce macromolecules encapsulating said active principle

~~for the vectorization of products, comprising:~~

~~stripping off the nanotubes structures according to claim 1 and purifying the nanotubes obtained according to the method of claim 9, 10 or 11 to solubilise hydrophobic molecules,~~

~~solubilising hydrophobic molecules according the method of claim 14 to obtain complexes useful as vectors.~~

17. (Currently Amended) The structure as claimed in claim 6, wherein the neutral hydrophilic head is a moiety of a sugar or polysaccharide.